

HUMAN-COMPUTER INTERACTION

A Journal of Theoretical, Empirical, and Methodological
Issues of User Science and of System Design

Volume 10
1995



LAWRENCE ERLBAUM ASSOCIATES, PUBLISHERS
Mahwah, New Jersey

HUMAN-COMPUTER INTERACTION

EDITOR: Thomas P. Moran, *Xerox Palo Alto Research Center*

ADMINISTRATIVE EDITOR: Patricia Sheehan, *Xerox Palo Alto Research Center*

PRODUCTION EDITOR: Karen A. Wynbeek, *Lawrence Erlbaum Associates, Inc.*

EDITORIAL BOARD:

John Anderson	<i>Carnegie Mellon University, Pittsburgh, PA</i>
Ruven Brooks	<i>Schlumberger Laboratory for Computer Science, Austin, TX</i>
John Seely Brown	<i>Xerox Palo Alto Research Center, Palo Alto, CA</i>
Stuart K. Card	<i>Xerox Palo Alto Research Center, Palo Alto, CA</i>
John M. Carroll	<i>Virginia Polytechnic Institute & State University, Blacksburg, VA</i>
Bill Curtis	<i>Software Engineering Institute, CMU, Pittsburgh, PA</i>
Jonathan Grudin	<i>University of California, Irvine, CA</i>
Donald E. Knuth	<i>Stanford University, Stanford, CA</i>
Robert E. Kraut	<i>Carnegie Mellon University, Pittsburgh, PA</i>
Morten Kyng	<i>Aarhus University, Aarhus, Denmark</i>
Clayton Lewis	<i>University of Colorado, Boulder, CO</i>
Brad A. Myers	<i>Carnegie Mellon University, Pittsburgh, PA</i>
Donald A. Norman	<i>Apple Computer, Cupertino, CA</i>
Dan R. Olsen, Jr.	<i>Brigham Young University, Provo, UT</i>
Gary M. Olson	<i>University of Michigan, Ann Arbor, MI</i>
Judith S. Olson	<i>University of Michigan, Ann Arbor, MI</i>
Richard Pew	<i>Bolt, Beranek, & Newman, Inc., Cambridge, MA</i>
James R. Rhyne	<i>IBM T.J. Watson Research Center, Yorktown Heights, NY</i>
Elliot Soloway	<i>University of Michigan, Ann Arbor, MI</i>
Lucy Suchman	<i>Xerox Palo Alto Research Center, Palo Alto, CA</i>
Terry Winograd	<i>Stanford University, Stanford, CA</i>
Richard Young	<i>MRC Applied Psychology Unit, Cambridge, UK</i>

Human-Computer Interaction is published quarterly by Lawrence Erlbaum Associates, Inc., 10 Industrial Avenue, Mahwah, NJ 07430-2262.

Subscriptions (based on one volume per calendar year): Institutional, \$195; Individual, \$39. Subscriptions outside the United States and Canada: Institutional, \$220; Individual, \$64. Claims for missing issues cannot be honored beyond 4 months after mailing date. Duplicate copies cannot be sent to replace issues not delivered due to failure to notify publisher of change of address.

Copyright © 1995, Lawrence Erlbaum Associates, Inc. No part of this publication may be used, in any form or by any means, without permission from the publisher.

Special requests for permission should be addressed to the Permissions Department, Lawrence Erlbaum Associates, Inc., 10 Industrial Avenue, Mahwah, NJ 07430-2262.

Printed in the United States

ISSN 0737-0024

HUMAN-COMPUTER INTERACTION

A Journal of Theoretical, Empirical, and Methodological Issues of User Science and of System Design

Contents of Volume 10

Number 1

Living Design Memory:

Framework, Implementation, Lessons Learned1

Loren G. Terveen, Peter G. Selfridge, and M. David Long

Algorithms for Automatic Dialogue Analysis Using

Propositional Production Systems39

Dan R. Olsen, Jr., Andrew F. Monk, and Martin B. Curry

Beyond Object-Oriented Technology:

Where Current Approaches Fall Short79

Gerhard Fischer, David Redmiles, Lloyd Williams,

Gretchen I. Puhr, Atsushi Aoki, and Kumiyo Nakakoji

Numbers 2 & 3

Introduction to This Special Issue on

Empirical Studies of Object-Oriented Design121

Françoise Détienne and Robert Rist

Design Strategies and Knowledge in Object-

Oriented Programming: Effects of Experience129

Françoise Détienne

Cognitive Activities and Levels of Abstraction in

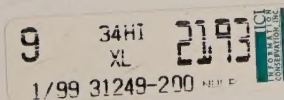
Procedural and Object-Oriented Design171

Nancy Pennington, Adrienne Y. Lee, and Bob Rehder

Are Objects That Important? Effects of Expertise and

Familiarity on Classification of Object-Oriented Code227

Simon P. Davies, David J. Gilmore, and Thomas R. G. Green



Object-Oriented Analysis and Design in Software Project Teams	249
<i>James D. Herbsleb, Helen Klein, Gary M. Olson, Hans Brunner, Judith S. Olson, and Joe Harding</i>	

Object-Oriented System Development in a Banking Project: Methodology, Experience, and Conclusions	293
<i>Ute Bürkle, Guido Gryczan, and Heinz Züllighoven</i>	

Objects of Our Desire: Empirical Research on Object-Oriented Development	337
<i>Bill Curtis</i>	

Number 4

Development of Text-Editing Skill: From Semantic and Syntactic Mappings to Procedures	345
<i>Léon Harvey and Robert Rousseau</i>	

Remote Conversations: The Effects of Mediating Talk With Technology	401
<i>Abigail J. Sellen</i>	

Acknowledgment to Reviewers	445
--	-----

Author Index for Volume 10, 1995	446
---	-----